



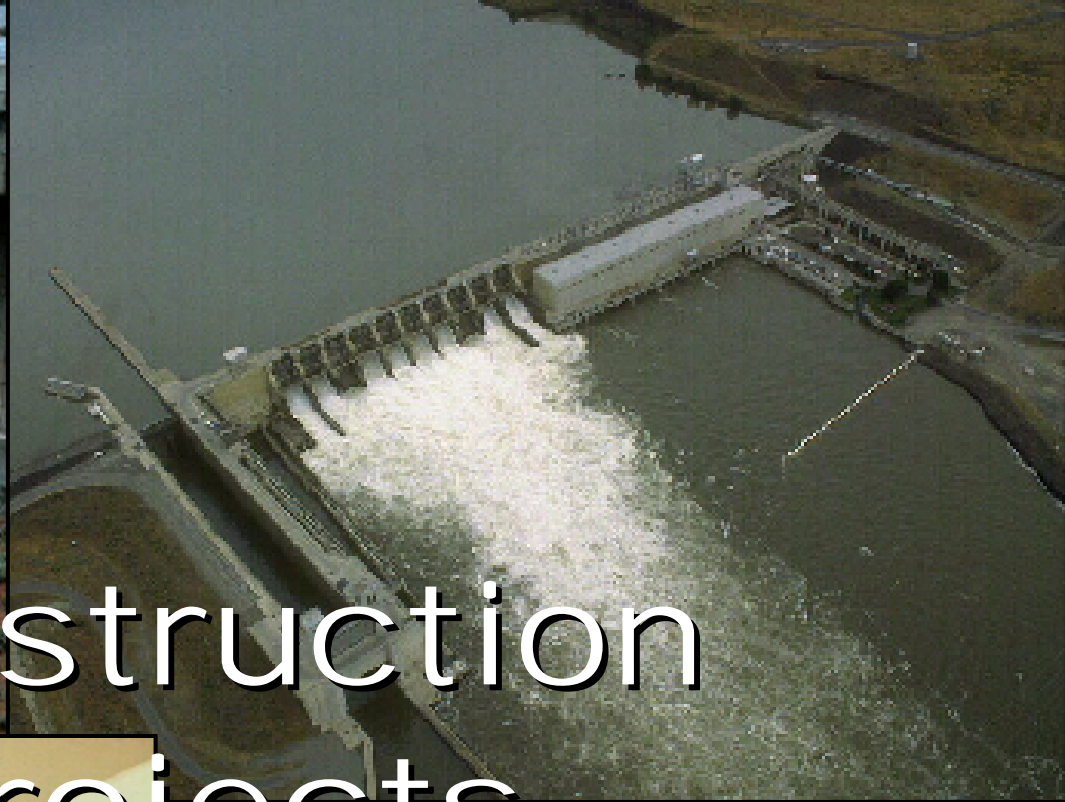
# Risk Analysis Process



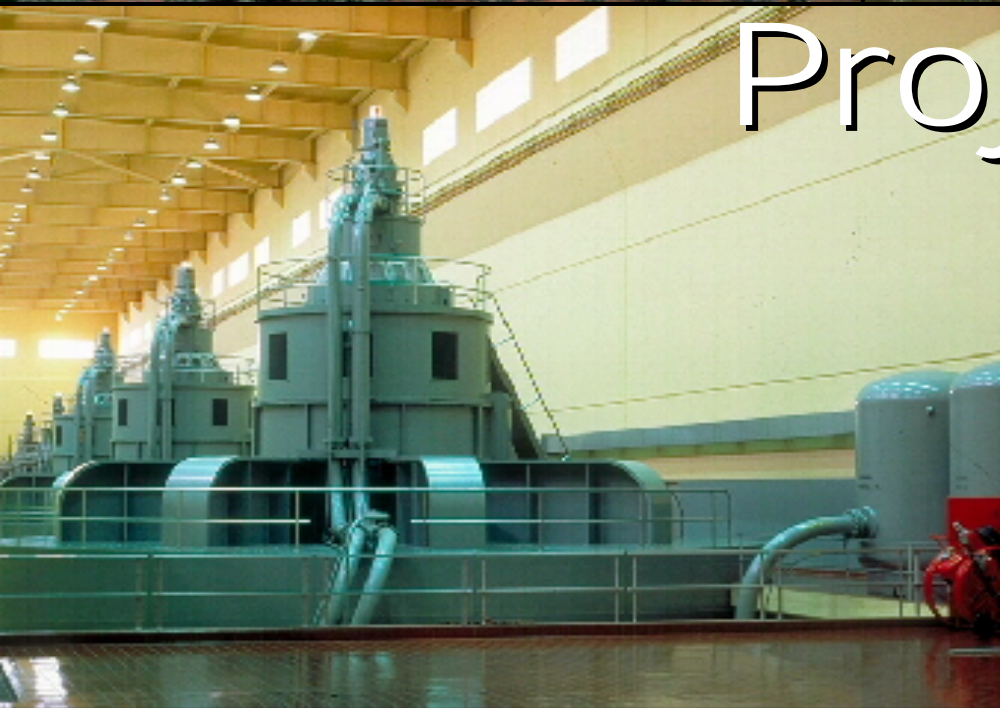
US Army Corps  
of Engineers

# INTRODUCTIONS

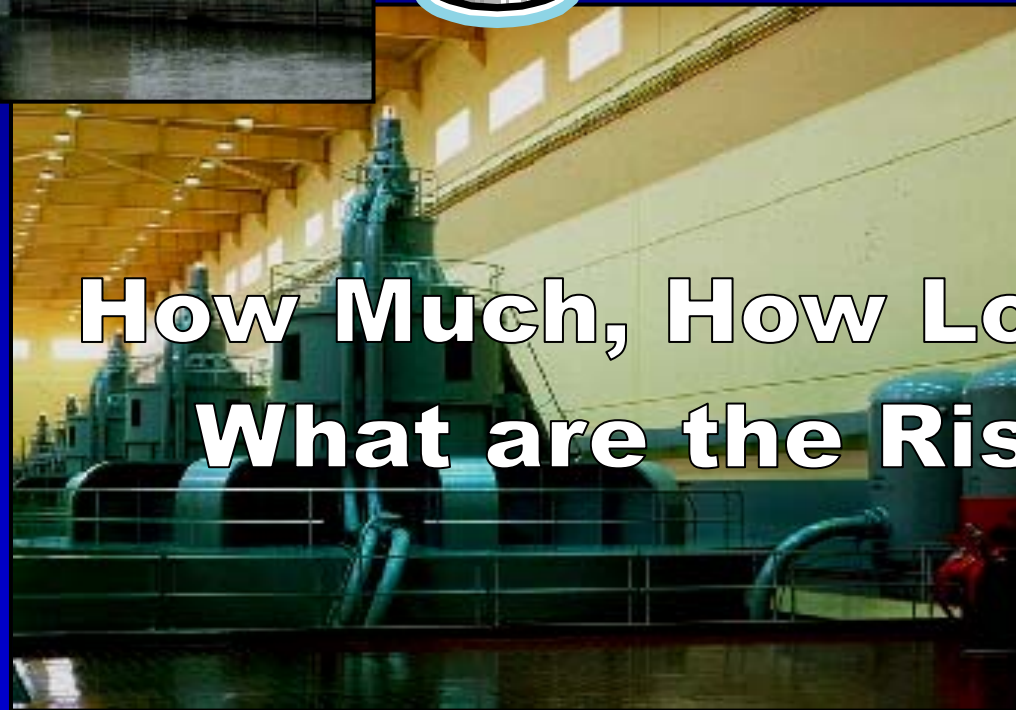
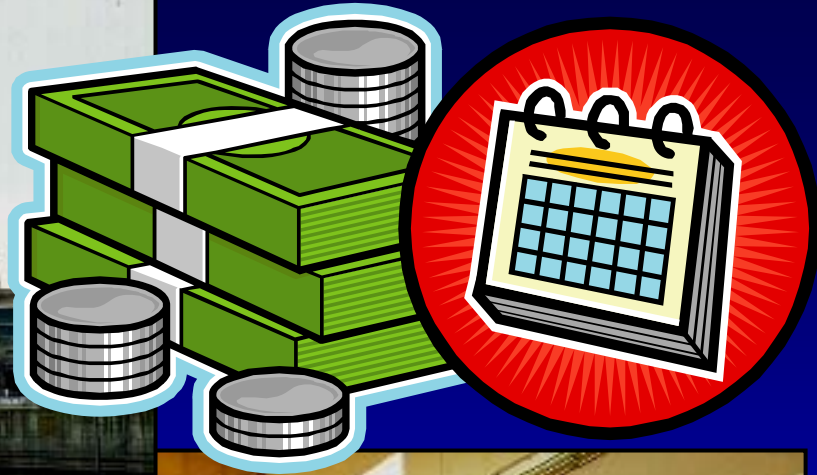
- **Project**
- **NWW Cost Cx**
- **PDT Members**



# Construction Projects







**How Much, How Long...  
What are the Risks?**

# Corps Products

## Mission Statements:

- **Innovative Engineered Solutions**
- **Provide Quality Products**
- **Fair and Reasonable Costs**
- **Within Scheduled Time**

# Our Objective

**Provide Management and Congress accurate cost estimates  
and construction schedules, based on the scope of the project . . .**

**so we can . . .**

**Obtain Authorization and Funding . . .**

**to . . .**

**Execute Civil Works Projects!**

# OVERVIEW AGENDA

- **Why Are We Doing This?**
- **What Is It?**
- **PDT Benefits – Management Tools**
- **Suggested PDT Members**
- **Prescribed Process**
- **Risk Identification**
- **Risk Considerations**
- **Products**
- **Questions**

# WHY ARE WE DOING THIS?

- Major General Riley Memo 3 Jul 2007
- E&C Bulletin 10 Sep 07
- Regulations and Guidance undergoing transformation

## *Per the PMBoK Guide:*

*“The objectives of Project Risk Management are to increase the probability and impact of positive events, and decrease the probability and impact of events adverse to the project.”*



# HQ DOCUMENT QUOTES

**“A formal cost risk analysis shall be prepared for all decision documents requiring congressional authorization for projects exceeding forty million dollars.”**

**“The cost engineer is assigned the responsibility for conducting the cost risk analysis...”**

**“The Project Delivery Team (PDT) shall assist the cost engineer in establishment of project contingencies...”**

**“Crystal Ball software shall be used to conduct Cost Risk Analysis.”**

# MORE QUOTES - APPLICATION

**“During the Feasibility phase, a cost risk analysis shall be performed once the recommended plan is identified. The results of the cost risk analysis will be included in the Feasibility Report and discussed at the Alternative Formulation Briefing.”**

**“During the PED phase, a new cost risk analysis shall be conducted upon major changes in design and for each update in the Total Project Cost Estimate.”**

# WHAT IS IT?

## Per the PMBoK Guide:

*“Project Risk Management includes the processes concerned with conducting risk management planning, identification, analysis, responses, and monitoring and control on a project; most of these processes are updated throughout the project.”*

# **PDT BENEFITS – MANAGEMENT TOOLS**

- **Highlights Risk Areas**
- **Highlights Potential Benefits**
- **Identifies Methods to Manage Risks**
- **Establishes Platform for Future Risk Studies**

# **PRESCRIBED PROCESS**

- **PDT - Brainstorm Risks and Opportunities**
- **PDT - Develop Draft Risk Register**
- **Estimates - Complete Most Likely, Best Case, Worst Case**
- **Develop and Run Risk Model**
- **Study and Report Results**
- **Establish Contingency % and Amount**

# SUGGESTED PDT MEMBERS

- **Project & Planning Managers**
- **Contracting**
- **Real Estate & Relocations**
- **Environmental**
- **Designers**
- **Estimators**
- **Construction**
- **Operations**
- **Sponsor(s)**



# Risk Methodology (PMI)

- **Project Delivery Team (within PMP)**
- **Risk Identification**
- **Risk Analysis and Quantification**
- **Risk Response/Mitigation Plan**
- **Risk Monitoring and Control**

# RISK IDENTIFICATION

- **Cost & Schedule**
- **All Project Features**
- **Federal and Non-Federal \$**

# RISK CONSIDERATIONS

- **Organizational**
- **Project Management**
- **Contract Acquisition**
- **Technical Risks**
- **Lands and Damages**
- **Regulatory**
- **Environmental**
- **Construction**
- **External Impacts**

# PRODUCTS

- **Draft Risk Register**
- **Most Likely Estimate**
- **Best & Worst Case Estimates**
- **Crystal Ball Output**
- **Risk Analysis Report**

# Results of Risk Identification Meeting

- **Produces a Draft Risk Register, Identifying Potential Risk Issues and Opportunities**
- **Assigns Risk Levels to all Potential Risk Issues and Opportunities**
- **Provides PM a Risk Management Roadmap for Management for the Project, Assigning Responsibilities for Risk Mitigation and Management**
- **Creates Risk Register and Risk Breakdown Structure that can be updated throughout Project for each Milestone**

# Results of Crystal Ball Output

- **Total Project Cost to 80% Confidence Interval (Establishes Contingency for Cost Growth)**
- **Total Project Schedule to 80% Confidence Interval (Establishes Uncaptured Escalation and “Hotel Cost” Contingency due to Schedule Growth)**
- **Refined Most Likely MCACES Estimate**
- **More Accurate Contingency for Cost Growth/ Escalation for Total Project Cost Summary**